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THIS IS **UNEVALUATED** INFORMATION

Boiler House #2:

1. **Steam Generators #14 and 16:** Induced draft fan capacity is too small; approximate output 50,000 lbs per hour each, 3½" thick fuel bed 9% CO_2.

2. **Steam Generators #10 and 12:** Eroded spots in the drums are to be welded upon the advice of a Soviet expert. Steam generators are to be raised over three feet and Babcock and Wilcox style 28 grates copied from existing grates in the Wing On Cotton Mill and fitted in place. All work to be carried out by SPC staff. Aim 70,000 to 80,000 lbs of steam per hour. If successful, all steam generators in Boiler House #2 will be modified in this manner.

Boiler House #3:

3. Principal work in progress is complete overhaul of steam generator 24. Included in the overhaul is a fitting of Lungstrom-Howden rotary regenerative preheaters of local manufacture to steam generators 17 and 18. Local made electric motors will be used. All structural work to be prefabricated from angle iron and plate and riveted together. Induced draft fan installed after the preheater. All work is being carried out by local contractors. Lack of detailed drawings led to awkward shapes and bends of ducting. Preliminary work on the overhaul of steam generator 19 and fitting of horizontal preheater to the steam generator had begun.

4. Chain grate stokers were giving continuous trouble owing to non-standardization of parts. Grates were frequently splitting owing to defective link castings and hi-speeds.

5. Steam generator #19 is being fitted with a standard forced draft fan driven by a locally made 90 horsepower AC motor.

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6. The chief shortages in the machine shop were in "I" beams and ball and thrust races, especially in the larger sizes for the preheater center thrust race and spherical race. Some locally made Manchurian bearings gave very short service before cracking up. All races in use have been converted to m/m sizes and an endeavor has been made to order these from Czechoslovakia. Consumption in Boiler Houses 2 and 3 varies between 1.60 and 1.85 lbs of coal per kw. Cast steel taper pieces on the main range were giving trouble with cracks developing at the base of the flange where it joins the pipe.

Boiler House #4:

7. Chief Trouble: Erosion of induced draft fan impellers. The copy of the steam generator #31 induced draft fan fitted to steam generator #27 was not a success. It was found that the inlet damper could only be partially opened and further opening overloaded the motor. Although the grit collectors were claimed to be more efficient than the existing steam generator 31 collectors, rapid erosion of the grit collector casing set in and this had to be extensively patched and partially renewed on several occasions. Steam generator output however was normal.

8. The weight of the fan caused increased deflection of horizontal supporting beams and settling of vertical ones. Consideration is being given to reversion to the original multi-blade type fan with single inlet and grit collector.

9. Supporting beams were being renewed. Steam generators 27 and 29 headers, which showed minute cracks between tube holes, were being taken out and rewelded and machined.

10. Caking of powdered fuel in the hoppers was being minimized on the advice of the Soviet expert by more extensive lagging and keeping the hoppers and feed system under slight negative draft. Shortages of bearings for the mills were also being experienced.

Boiler House #5:

11. This unit was given a partial overhaul. Induced draft fan impellers were rebladed. Usual repairs were carried out to the Bailey walls. The preheater gas recirculating fan was cut out on the advice of the Soviet expert. Steam valves were carelessly overhauled in spite of my warning about angles and contours of seat and lid, consequently on the unit being put on load, one steam valve was intermittently lifting, with the result that the unit was gagged. When a station load reduction occurred, owing to extreme shortage of long fibre cotton, advantage was taken to correctly overhaul this valve. Shortly after the unit was again placed in position it was found to have a defective header, handhole cover gasket. This was changed and the unit hydrostatically pressure tested. The unit tube was found to be cracked at the welded joint inside the generator. This crack was roughly chipped out and re-welded in situ and the unit was again placed in position.

12. [redacted] the pipe diameter should be carefully calibrated and when it had increased by a certain percent, not stated, the piping should be changed.

13. The Turbine House was off bounds to the Boiler House Staff. Trouble was experienced with turbine generator #18 governor mechanism and turbine generators 5 and 9 were both giving serious electrical trouble. This, in my estimation was caused by complete lack of engineers trained for this work. The only man who knew anything about these problems was the No 1 Winding Shop fitter, but he had disappeared in one of the purges.

14. Station output prior to the cotton shortage was a little under 3,000,000 kw hours per day but was dropped to approximately 1,800,000 to 2,000,000 kw per day. [redacted]

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15. The plant operators are supervising the planning for an installed capacity of approximately 300,000 kws. Additional equipment is to be bought in Czechoslovakia. Communist newspapers stated that the power administered in the Shanghai area was short by approximately 20,000 kws. [redacted] 50X1-HUM
[redacted] coal was being brought in from various sources. Calorific 50X1-HUM
value, ash percent and ash fusion point vary widely; consequently output of the steam generator is very erratic.

16. Constant trouble was incurred in the coal handling plant owing to the burning out of electric motors. This was due to the age of the motors and the lack of maintenance by trained electrical engineers.

17. A scheme was afoot to bring the Communist government head office engineering branch to Riverside Station to form a super-committee which would control the station and plan future policy. There was a definite shortage of boiler tubes, and the Communists were trying to obtain parts from Czechoslovakia.

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[redacted]

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